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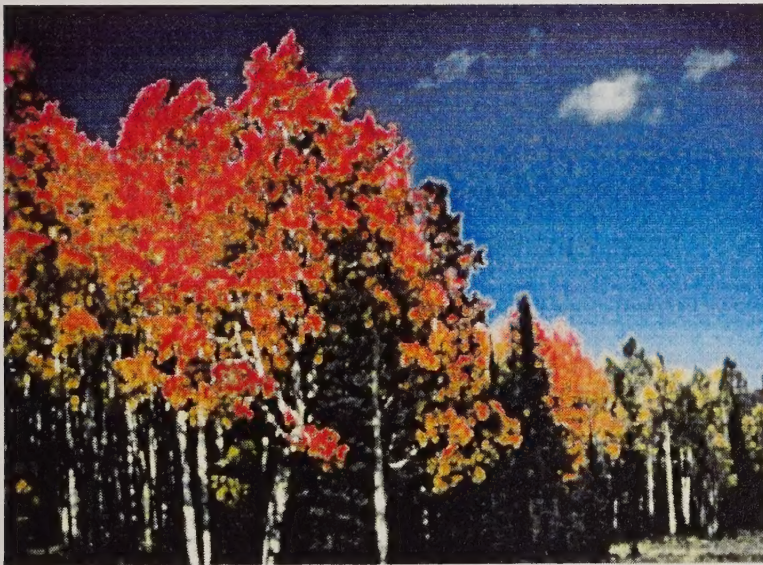


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FOREST HEALTH PROTECTION

Focusing Resources and Responding to Needs

A Strategy



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**USDA Forest Service
Northern and Intermountain Regions**

June 2001

A Strategy to Focus Resources and Respond to Needs

The Forest Health Protection Team

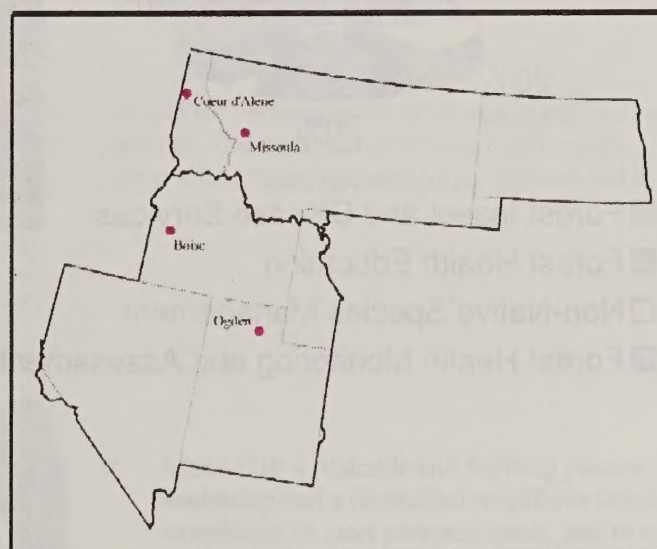
Forest Service entomologists, plant pathologists, foresters, and other forest health specialists and technicians make up the Forest Health Protection (FHP) staff in the Northern (R1) and Intermountain (R4) Forest Service Regions in Utah, Nevada, Idaho, Montana, North Dakota, and western Wyoming. FHP in the two regions shares a director with the Cooperative Forestry Staff.

We assist federal and tribal land managers directly, and cooperate with state forest health specialists who assist state and private land managers. We work to:

- Survey forests to detect insects and diseases and to monitor and evaluate insect, disease and forest health conditions.
- Develop and conduct training and educational programs to inform land managers, the public and others about insect and disease conditions; control or mitigation measures; and prevention techniques.
- Develop insect and disease management technology and assist land managers with its use.
- Develop weed biological control technology and transfer it to forest and range managers.
- Serve land managers by making insect and disease related service trips, by reviewing plans, National Environmental Protection Act documents and prescriptions, and by providing advice on insect and disease management.

This Strategy:

- Focuses Forest Health Protection resources on the highest priority work.
- Communicates Forest Health Protection roles and direction to partners.
- Increases effectiveness and efficiency between the Intermountain and Northern regions.
- Guides the field offices in making tactical decisions during their annual work planning in addition to incorporating direction from leadership and input from our partners.



We are located in Forest Service Regions 1 and 4, with Field Offices in Boise, ID, Coeur D'Alene, ID, Missoula, MT, and Ogden, UT.

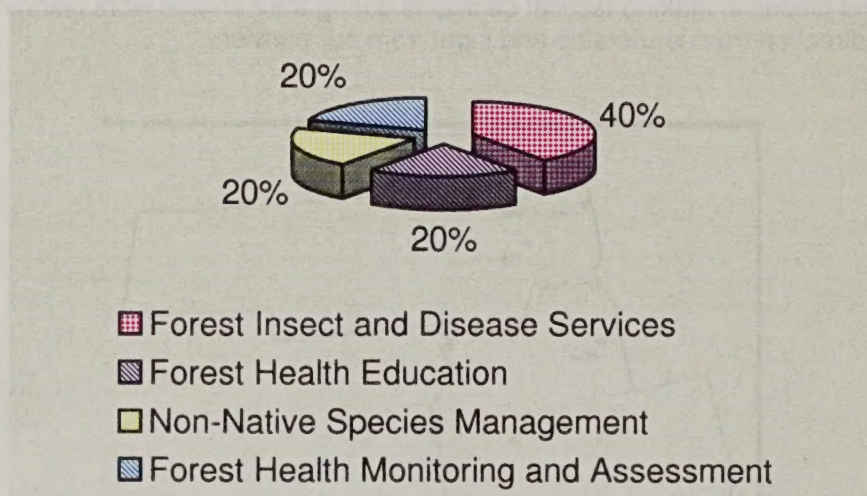
New Way of Doing Business

Changes in national priorities and land management policies continue, bringing additional needs and requests for our services. These include:

- The need for insect and disease services has increased, as forest health and sustainability have become goals of federal land management. Additionally, our customer base has expanded to include non-forestry specialists.
- The fires of 2000 brought a need for increased insect and disease services in burned areas, and a focus on making wildland and community forests more resilient and healthy in the future.
- The need for unbiased public information on forest health topics is critical: forest conditions, the significance of insect and disease caused trends, and the kinds of treatments needed to sustain expected values.
- New programs are needed to develop and implement biological control technology for weeds and an increased emphasis is needed on non-native pathogens and insects.
- There is a need to integrate our insect and disease survey and assessment activities into a more comprehensive forest health monitoring program, which will make data more accessible and reporting more efficient.

Hitting the Mark

We found that incremental — not radical — changes were needed. The vision, goals, objectives and actions outlined in this plan are designed to help our Team focus on actions that will meet changing priorities. It will help us build on the service capabilities of the 1980s and tackle the new emphasis areas of the 1990s. Our efforts will be focused in the four areas shown below and described in subsequent sections:



VISION

We help people keep the kinds of forests they value. The FHP staff has specialized skills and experience in insect and disease management, and knowledge about broader forest health concepts, conditions and trends. We help people understand the effects various agents have on their forests, the alternatives they have to influence those effects, and ways that treatments can be integrated to meet multiple objectives.

We challenge ourselves to:



- Deliver the best scientific information and technology available on the management of forest insects and diseases, tailored to meet individual landowner objectives and expectations.



- Become a full partner in environmental education, and be viewed by others as an objective source of science-based forest health



- Provide technology and professional assistance to help reduce the impacts of non-native pathogens, insects and weeds, and prevent the establishment of others.



- Efficiently monitor and assess forest insect, disease and health conditions, and provide timely reporting on trends, issues and



- Be valued partners in forest, fire and range management as we leverage our capabilities by working alongside professionals from various countries, agencies, organizations and the media.



- Make FHP a desirable and fulfilling place to work, where leadership and a diversified workforce strive to achieve professional excellence, to meet personal needs, and to accomplish organizational goals and objectives.

Forest Insect and Disease Services

Insect and disease-related information and technical services for land managers and various specialists will continue to be our core program. With state partners, we will provide state-of-the-art information, technology and technical assistance required to manage insect and disease influences on various ecological and resource values.

Current Status

- Forested lands have increased in susceptibility to bark beetles and root diseases because of changing species composition, increasing density and sometimes increasing age.
- Management for traditional forest products has been de-emphasized on federal lands, and increased on state and private lands.
- Requests for assistance from state and private land managers are increasing.
- Prescribed fire, alone or in combination with mechanical treatment, is increasing as a management tool on federal lands.
- Information is needed on federal lands for both insect and disease effects on resource production and their positive and negative effects on various values in a broad ecological and social context.
- Many forest plans are currently being revised and others will be revised in the near future requiring expertise in forest health issues.
- Silvicultural treatments on federal lands are increasingly contested, increasing the need for scientifically based and well documented information on alternative treatment strategies.
- Additional testing, development, documentation, and transfer of technological tools are needed to meet the demands and needs of our customers.

FHP Responds

Technical Assistance – In the past, technical assistance was provided mainly to foresters and silviculturists to meet resource management objectives. Increasingly we also assist fire ecologists, wildlife biologists, weed specialists, range managers and others to meet broader forest health and sustainability goals.

Management – Over the past decade, an average of \$1.4 million per year has been provided to National Forests, other federal agencies, and the states for insect and disease suppression projects. We administer the prevention and suppression program by providing standards and priorities for funding, reviewing and funding proposed projects, and reviewing accomplishments.

Training - Our insect and disease training program has evolved to include increased emphasis on managing insects and diseases to meet more diverse management objectives for a broader range of clients. In cooperation with our State partners and the Cooperative Extension Service, approximately 300 individuals per year are trained in pest recognition, pest management techniques, and hazard tree recognition.

Technology and Science – Insect and disease hazard rating and stand simulation models are available for predicting resource impacts from individual agents. Newer work has been focused on the combined effects of various agents on vegetation change across the landscape. Better methods of detection and remote sensing are being developed, as well as increased use of Internet capability.

Goal, Forest Insect and Disease Services: Forest resource managers understand the significant interactions of insects and diseases within forest ecosystems and implement appropriate management alternatives to meet established objectives.

Objective: Provide a science-based perspective on the impacts of insects and diseases for both programmatic and project plans to give land owners and managers the best information on which to base decisions.

Actions:

- Assist national forests in Forest Plan revisions by providing information on past influences of insects and diseases on forest conditions, their probable future effects under different management alternatives, and treatments that can be used to modify those effects.
- Provide information on the interactions of insects, diseases and fire, so that effective tactics can be implemented at the project level to enhance varied forest values, reduce fire threats, and create more resilient and sustainable forests.
- Assist land managers with management of insects and diseases, and provide financial support for insect and disease prevention or suppression projects.

Objective: Make insect and disease recommendations relevant to changing values and management objectives of a broad base of clients to engage land managers in creating sustainable forests.

Actions:

- Evaluate insect and disease training and technical assistance activities through the use of surveys and customer satisfaction data to assure their relevance to current and new customers and changing management objectives.
- Understand the kinds of forest the public wants and, through assessment and modeling, help them understand the influences that insects and disease will have upon those forests both ecologically and economically.
- Provide communities, forest owners and land managers with information on the response of insects and pathogens to fire, and the technology and assistance they need to manage those effects.

Objective: Develop and make available efficient and effective tools for assessment, prediction and management of insect and disease effects with cooperators in universities and research to help land managers better assess their forests.

Actions:

- Validate and refine techniques for insect and disease hazard rating and forest change modeling at different scales to simulate the long-term effects of insects and diseases on forest conditions and ecological functioning.
- Develop and improve technology needed for assessment and management of insects and diseases.

Forest Health Education

Informed, objective information on forest health is often lacking. We will refocus our environmental activities to be more effective by using a broader array of marketing techniques. We expect to work with a large number of cooperators and the media to reach the general public, students, policy makers, and groups with special needs at all levels.

Current Status

- The management of the nations forests is of great public interest.
- People increasingly live in urban areas or in the urban wildland interface, and are not always aware of the complexity of forest resource issues, or how those issues may affect them personally.
- Nearly a century of fire suppression, the introduction of exotic agents, and certain management practices, have drastically changed forest conditions and increased forest susceptibility to many diseases and insects.
- In the Intermountain and northern Rocky Mountain forests, diseases and insects are major influences on forest conditions, the most significant agents of change in the absence of fire or management.
- It is important for all who participate in forest planning and management to understand the effects of diseases and insects on forest health, and the ways that management practices can influence forest health. New technology, such as the Internet, provides an efficient way to provide information to the general public.
- The need for information greatly exceeds our resources, so it is important that we identify our unique role and find ways to be most efficient and effective.

FHP Responds

Quality Information - Our primary emphasis in the past has been information on insects and diseases for technical customers and partners. During the past decade, as a result of increasing needs and requests, FHP has provided broader information on forest health to elected officials and policy makers, the general public, and to students at all levels. Credible and well-documented information is crucial to the development of public policy

Products and Services - Forest health products and services we provide include: information for agency line officers and interdisciplinary teams; lectures at schools and universities; training for homeowners, master gardeners, and others; information for congressional staffs; and various reports on forest health.

Internet Services – Each of the Regions now has an Internet site, but much work is needed to expand them to cover the full range of insect, disease and forest health information needed by an informed public.

Goal, Forest Health Education: Agency personnel and the public understand the roles of insects and diseases in healthy forest ecosystems and the influence of various management alternatives on forest health.

Objective: Redesign our forest health education activities to reach a broader audience and to encourage forest health as a management goal.

Actions:

- Identify information needs and target audiences and plan how to efficiently provide that information.
- Assist agency leaders and interdisciplinary teams in making forest health a goal of management by describing changes in forest conditions and functioning, and the implications of changes to management.
- Work more closely with cooperators, media outlets and technology, such as the internet, to deliver the message in a more cost efficient and effective manner.

Objective: Provide scientifically based information on forest health issues to the public to allow informed participation in forest resource management decisions.

Actions:

- Produce publications on important forest health topics, targeting non-technical customers.
- Make personal contacts with media reporters and provide them with forest health information to facilitate more accurate reporting.
- Look for opportunities to foster discussion between groups with diverse interests regarding forest health issues.

Objective: Assist organizations that reach youth in providing information on forest insects, diseases and health to build enthusiasm for environmental science, educate future leaders, and prepare students for resource management careers.

Action:

- Use existing educational programs to provide forest health information, training, and training aids for teachers of grades K through 12 and college teachers.

Non-Native Species Management

We will continue to monitor and manage impacts of established non-native insects and pathogens, as well as to prevent new introductions. We will expand our new program on the development and transfer technology for the biological control of weeds.

Current Status

- Invasive plants, insects and pathogens cause severe damage to native plants and ecosystems in the Intermountain and northern Rocky Mountains regions. New introductions are increasing.
- White pine blister rust became established about 70 years ago, and has drastically reduced populations of western white and whitebark pines. Restoration of rust resistant white pine is needed if Intermountain forests are to achieve their historic potential.
- Gypsy moth, long established in the East, continues to be introduced to the West, and only vigilant monitoring and eradication prevent its establishment here.
- Two other insects have become established, balsam wooly adelgid and larch casebearer, and others like Asian longhorned beetle threaten.
- Many invasive plants such as spotted knapweed, leafy spurge, and yellow star thistle have become established and continue to colonize forest and rangeland habitat, replacing native vegetation and causing serious economic and ecological damage. Toadflax, tansy ragwort, and others have limited distribution but will increase if management is not applied.

FHP Responds

Detection and Management. - FHP has long been involved with detection, evaluation and suppression of introduced insects and diseases. Eradication of several introductions of gypsy moth in Utah and Idaho has prevented successful establishment of this potentially damaging insect in the Intermountain West. In recent decades, rust resistant western white pine and integrated management techniques have been developed, which provide the tools for restoration of this Northern Region species. Other threats are being monitored.

Pesticide Use - FHP provides landowners and land managers with information and assistance with pesticide use. Needs for pesticide related services will grow because of the threat of invasions of undesirable plants following recent wildfires.

Biological Control - More recently, FHP entomologists have become involved in biological control of invasive plants using insects that feed on them. The ecological and economic impacts of these non-native plants, and the potential for population reductions from insects and pathogens, make biological control with a priority.

Goal, Non-Native Species Management: Forest managers are effective in dealing with adverse effects of established invasive insects, pathogens and plants, and new introductions are prevented.

Objective: Provide forest managers with scientific information, expertise and technology for the integrated management of white pine blister rust in support of white pine restoration.

Actions:

- Produce and distribute popularized publications on the damage caused by blister rust on western white and whitebark pines, and on the opportunities for restoration of these tree species.
- Provide technical information and financial support needed to maintain young western white pine plantations, and to re-establish additional ones.
- Develop additional rust resistance and additional technology for integrated rust management on western white and whitebark pines, and train foresters and others in their use.

Objective: Prevent the establishment of gypsy moth and the introduction of new non-native insects and pathogen species that might threaten native trees, shrubs and other plants.

Actions:

- Continue interagency monitoring for gypsy moth introductions, evaluate methods for treating small, isolated populations, and eradicate infestations where appropriate.
- Assist others with efforts to manage existing exotics, such as the Balsam woolly adelgid and the larch casebearer and minimize the potential for establishment of other exotics through surveillance and public education.

Objective: Provide information and technology for evaluating impacts, monitoring, and dispersal of biocontrol agents, and cooperate with state departments of agriculture, county weed boards, and others to develop integrated weed management technologies that incorporate biological control.

Actions:

- For weeds of most concern, work with university and research cooperators to develop biological control technology, and provide information on use as it becomes available.
- Market bio control technology as part of an integrated weed management strategy.
- Provide information and assistance on pesticides and biological controls used to control weed invasion in and near areas burned by wildfires.

Forest Health Monitoring and Assessment

Quality data are the foundation of our program. We will look for more efficient ways to survey for and evaluate insect and disease outbreaks, and with other partners, monitor forest health. We will make forest health information more accessible and reporting more efficient through a better integration of the Forest Health Protection, Forest Health Monitoring, and Forest Inventory and Monitoring program activities and through a better use of current and new technology.

Current Status

- Forest health has become a major issue, heightening the need for valid information on how forests change, how insects and pathogens influence that change, and what changes can be expected in the future.
- Both regions experience widespread outbreaks of insect and diseases, which resulted from invasions of exotic agents, fire exclusion for most of the 20th century, and some management practices.
- Many of these outbreaks have affected the forest's productivity and its ability to provide for many of the values people expect.
- Information needs include: the extent, severity, and population trends for all significant insects and diseases; the effects of management activities on insects and diseases; and the relationship of insect and disease outbreaks to forest health and fire.

FHP Responds

Aerial Surveys - FHP conducts insect and disease surveys, including aerial detection surveys, makes biological evaluations of important insect or disease conditions, and maintains permanent plots to evaluate disease and insect impacts.

Risk Maps - The two regions recently provided information used to produce a national insect and disease risk map. Additional efforts will be needed to further validate and quantify risks and management opportunities.

Forest Health Monitoring - The Forest Health Monitoring Program (FHM) has broader inventory responsibilities that include other aspects of forest health. FHM plots have been established in ID, UT, NV and WY, and other states are in-line for funding in future years. Forest health monitoring is in transition and is moving toward a fully funded and integrated program that provides a balanced assessment of health changes and issues.

State-wide Reports - With cooperators in Forest Service Research and the States, FHP reports on forest health conditions in individual states. A Forest Health Report has been published for ID and reports are in draft for UT and WY.

Goal, Forest Health Monitoring and Assessment: A comprehensive monitoring system contributes to a balanced assessment of the effects of insects, pathogens, pollutants, and other factors on forest health.

Objective: Integrate Forest Health Monitoring and Forest Health Protection into one well-coordinated and efficient forest health monitoring and reporting program to enhance the quality and quantity of information and to provide a more complete picture of forest health.

Actions:

- Evaluate alternatives for better integration of the two programs.
- Combine information from aerial detection surveys, insect and disease evaluations, permanent plots, and other activities for more efficient assessment and reporting.
- Evaluate new computer technology for data base management and incorporate into the monitoring program as appropriate.

Objectives: Monitor and assess insect and disease conditions and effects, forest susceptibility to insects and diseases, and project probable future effects of these agents.

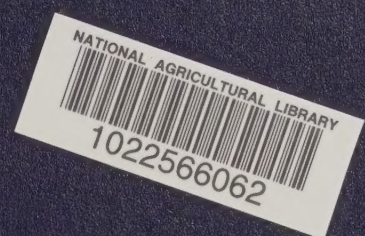
Actions:

- Validate and refine the R1/R4 part of the national insect and disease risk map for use in making "programmatic" decisions at that scale.
- Complete and report on permanent plot and forest health analyses in-progress, and supplement as needed with additional analyses of the effects of insects and diseases on successional trends.

Objectives: Develop and report science-based information on insect and disease conditions, trends and issues as they apply to forest health management and forest health issues.

Actions:

- Complete reports on forest health conditions, trends and issues for all states in the two Regions and issue annual updates through a wide range of outlets.
- Monitor and assess the response of bark beetles, wood decay fungi, and other organisms to the fires of 2000 to predict the outcomes of their activities and to evaluate the effectiveness of suppression treatments.



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